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## RESISTANCE OF BACTERIA CULTIVATED IN A FLOWING MEDIUM

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[Comment: This is an abstract of a communication from the Institute of Biology of the Czechoslovak Academy of Sciences, (Division of) Microbiology, Prague.]

Escherichia coli and salmonella enteridis were cultivated in a flowing medium according to a procedure described previously by I. Malek (cf I. Malek, Kultivace Bakterii ve Vicestupnovom Proudicim Prostredi, Cultivation of Bacteria in a Multistage Flowing Medium, Csl. Biologie, No 1, p 18, 1952). The resistance of these bacteria to a temperature of 55°C and to 1% formol was investigated. Both prolonged and brief experiments showed that under the conditions of cultivation in a flowing medium the majority of the bacteria in a culture retain a higher sensitivity to a raised temperature and to formol, than bacteria derived from static cultures. On the basic of the sensitivity of the bacteria to a raisch temperature and to formol, one may conclude that the conditions which are provided by cultivation in a flowing medium induce the majority of bacteria to remain in the stage for which a maximum level of metabolism is typical, i.e., the stage of so-called physiological youth.

Results of work along this line are important not only from the theoretical, but also from the practical standpoint. If under the conditions described we should succeed in obtaining bacterial cultures which have a normal and active metabolism, but at the same time are exceptionally sensitive to environmental conditions, it will be possible to kill them by applying much lower temperatures and much lower concentrations of disinfectants than that necessary in the case of the commonly used static cultures. Moveover, our method of multistage cultivation in a flowing medium also makes it possible to determine the effects of the products of metabolism

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and of the aging of the culture on the sensitivity of the bacteria. The result obtained will possibly indicate what factors are responsible for increasing the resistance of bacteria in static cultures.

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